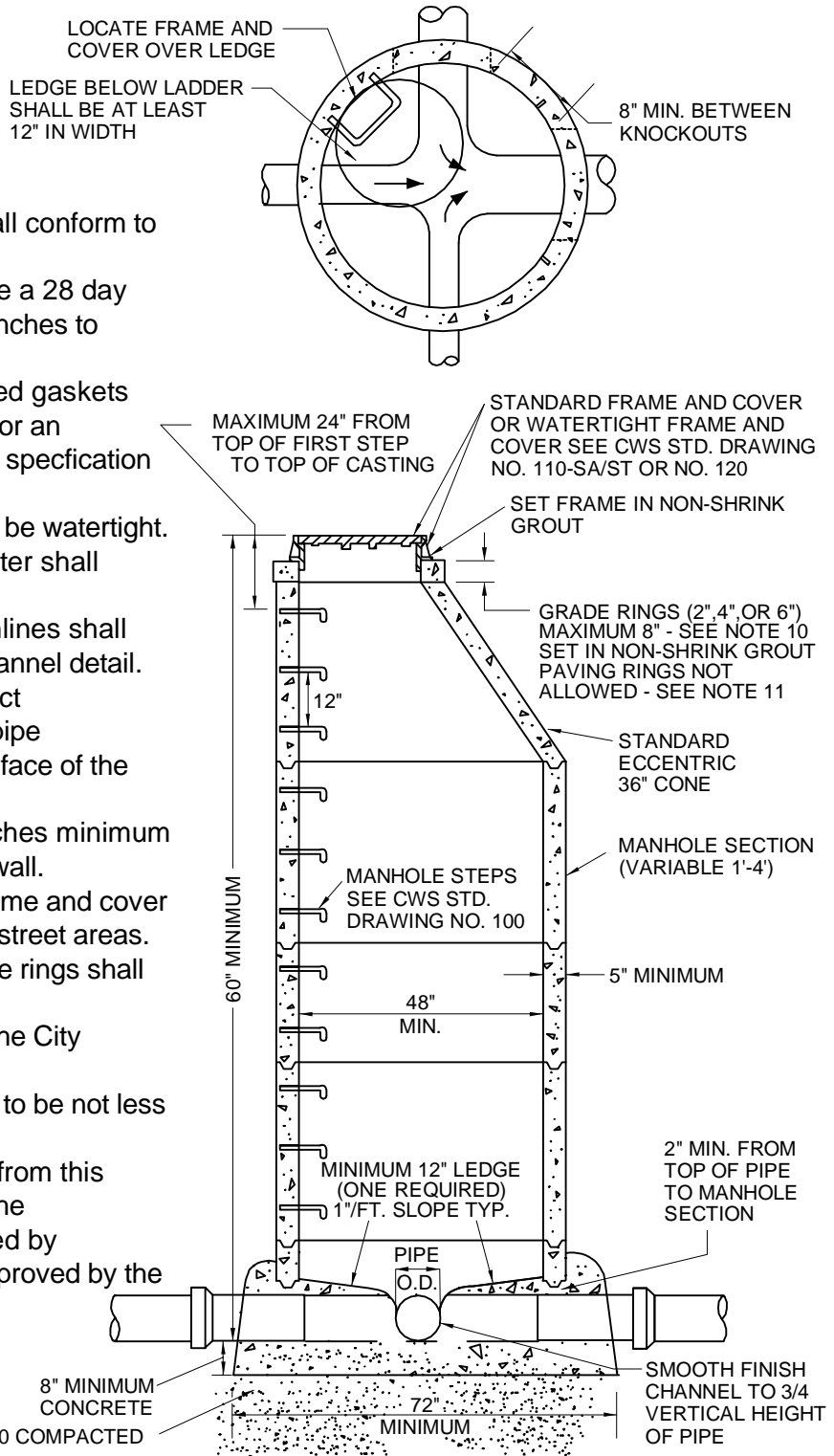


NOTES:

1. All precast manhole riser sections shall conform to the requirements of ASTM C 478.
2. All poured in place concrete shall have a 28 day strength of 3000 psi, and slump of 2-inches to 4-inches.
3. All joints shall be sealed with preformed gaskets such as Kent-Seal No. 2, Ram-Neck, or an approved equal conforming to federal specification SS-S00210.
4. All pipe connections to manhole shall be watertight.
5. *Pipe connections of 24-inches or greater shall require a manhole and channel detail.
6. Pipe connections of four or more mainlines shall require a manhole connection and channel detail.
7. Provide a minimum of 8-inches of intact (undisturbed) manhole wall between pipe breakouts as measured on the inside face of the manhole.
8. Breakout of wall for pipe shall be 2-inches minimum and 4-inches maximum clear of pipe wall.
9. Watertight / tamper proof manhole frame and cover shall be used in all easement and off street areas.
- 10.*No more than eight (8) inches of grade rings shall be used.
- 11.*Paving rings are not allowed without the City Engineer's written approval.
- 12.*Minimum fall between inlet and outlet to be not less than 0.10 feet.
- 13.*The City reserves the right to deviate from this drawing and related requirements in the *Engineering Design Manual* as dictated by project design parameters, and as approved by the City Engineer.

* INDICATES MODIFICATIONS FROM CWS

12" MINIMUM OF 3/4"-0 COMPACTED BASE MATERIAL



STANDARD MANHOLE

CWS (USA) STANDARD DETAIL NO. 010
MODIFIED BY BEAVERTON ORDINANCE #4303

ATTENTION! THIS DRAWING REPLACES DRAWING NO. 304, DATED 6-10-04



City Of Beaverton

ENGINEERING
DEPARTMENT

CWS (USA) STANDARD MANHOLE
WITH C.O.B. MODIFICATIONS

CITY ENGINEER
Terry Waldele, P.E.

DATE
11 - 15 - 04

DRAWN BY
JR - CPD

DRAWING NO.
304